Keeping Country Air Clean

A quick glance at this report might lead readers to believe that air quality is only a metropolitan issue. Air pollution is often associated with smoggy cities filled with smoke-puffing cars and soot-spewing factories. While many of our efforts do focus on keeping air in Kansas City and St. Louis clean and safe, the Department of Natural Resources' Air Pollution Control Program also works diligently with outstate areas of Missouri to maintain pristine air in our rural areas.

Open Burning

Throughout the last century, trash collection and removal services have been difficult to come by in many rural areas. As a result, generations of Missourians have resorted to burning their trash. Now most, if not all, areas of Missouri have access to affordable, convenient methods of trash disposal. However, many Missourians still rely on open burning to dispose of their trash because that's the way generations before them have done it.

Unfortunately, we now know that open burning of household trash can produce levels of certain toxic chemicals higher than a well-controlled municipal waste incinerator burning the trash of tens of thousands of homes, according to a recent study conducted by the U.S. Environmental Protection Agency (EPA).

Lower combustion temperatures and inadequate air supply result in high levels of dangerous emissions being produced. The incomplete burning of household trash can produce chemicals such as dioxins and furans. Although the effects of these chemicals on humans are still unknown, clinical studies on animals have linked dioxins to cancer, dysfunction and even developmental abnormalities. High levels of dioxin can also cause a skin condition known as chloracne. Common items such as paper and plastic products and some food items may release these chemicals when burned.

Because of these harmful effects, the department regulates many types of open burning. Waste generated by a business, trade, industry or any demolition may not be burned. This includes paper, cardboard boxes, pallets, tires, rubber products, hazardous materials, styrofoam, plastics, petroleum-based products and treated wood. Asbestos-containing materials also cannot be burned. For more information on open burning regulations, contact the department's Air Pollution Control Program at (573) 751-4817, or visit our Web site at www.dnr.state.mo.us/air.htm.

Several alternatives are available. According to Missouri state law, "each city and each county or a combination of cities and counties shall provide individually or collectively for the collection and disposal of solid wastes for those areas within its boundaries that are to be served by the solid waste management system; shall be responsible for implementing their approved plan required by section 260.220 as it relates to the storage, collection, transportation, processing and disposal of their solid wastes."

However, these requirements are relaxed in some rural areas of Missouri. Residents of rural areas may choose to participate in a "Green Box" program. This alternative can provide for a location where local residents can bring their residential waste to a container without being subject to transfer station permitting requirements. Most Missouri residents also have access to commercial trash hauling services or may, for a fee, take their wastes to a permitted transfer station or landfill for proper disposal. Contact your local Solid Waste Management District for more information or contact the Department of Natural Resources' Solid Waste Management Program at (573) 751-5401 for more information on alternatives to open burning.

Concentrated Animal Feeding Operations

Over the last few decades the number of Missouri farms has decreased. However, as the number of farms has decreased, the sizes of these farms have increased. Fewer farms and greater farm size means that production is becoming more concentrated.

Looking at just a few Missouri counties shows how quickly things can change. Nationally, Sullivan County was ranked 736 in terms of hog and pork production in 1992. By 1997, it jumped to 6th largest hog and pork producer in the United States (from 15,000 hogs and pigs in 1992 to more than 529,000 hogs and pigs in 1997). Mercer County leapt from 114 to 13 on this list. Vernon County went from 201 to 89 and Gentry County from 416 to 98.

Changes of this magnitude place tremendous strains on the environment. Individual farms can become quite large. Many people begin to perceive these operations as factories, rather than farms, and these factories may evoke negative images.

Until recently this change in Missouri agriculture occurred without any air regulations. Farming has traditionally been exempt from air regulations to allow farmers the right to farm their own land. This right is especially important as urban areas encroach upon rural areas and people are exposed to new sights, sounds and odors. However, in the last decade this situation has reversed and large farms are suddenly appearing and encroaching upon already rural areas. These large farms concentrate the number of animals and the odors associated with these animals and their waste.

In the past, odor control has depended on individual management practices. Odor control practices that work for a few animals don't always work for 1,000, 10,000 or 1000,000 animals.

The Department of Natural Resources' Air Pollution Control Program recently began working to control odor emissions from large Concentrated Animal Feeding Operations (CAFOs). Missouri's largest CAFOs are defined as Class IA and have animal populations starting at 4,900 head of dairy cows; 17,500 head of finishing hogs; or 210,000 laying hens. Missouri has 20 Class IA CAFOs. Many of these operations are considerably larger than the minimum necessary to qualify as a Class IA CAFO.

The department's Air Pollution Control Program amended its regulations in 1999 to remove the odor exemption for Class IA CAFOs because odors generate a number of complaints. More than 100 odorous compounds have been identified as coming from large hog CAFOs. The department's odor regulation now requires all existing and new Class IA CAFOs to submit an odor control plan to the department. This plan outlines how the operation will manage odor.

Existing CAFOs will have to implement their plans by Jan. 1, 2002. New CAFOs must have approved odor plans prior to operation. In addition, the department's odor regulation establishes an odor performance standard beginning Jan. 1, 2002. This performance standard is measured at the operations' boundaries. Operations exceeding that standard are in violation of the regulation and subject to fines and corrective measures.

Odors from CAFOs can come from several areas, but they primarily result from animal housing and waste disposal. Waste storage and disposal are often cited as among the worst odor generators. Open storage of waste in lagoons and aerial spraying of waste on fields are visible signs of the amount of waste generated.

Building odors can also be strong depending upon how the waste is managed in the building.

Well-planned building and waste storage designs, management practices and controls can be implemented on CAFOs to reduce odor. The problem the department now faces is determining how to address odors at existing CAFOs that were not designed with odor control in mind.

Odor emissions are difficult to control. Targeting one or two compounds may not be sufficient to change the perceived odor and controlling all the compounds may be impossible. Odor control at these operations requires a broader approach.

Rather than mandating specific controls to be implemented at all facilities, the department's Air Pollution Control Program regulations require each Class IA CAFO owner to evaluate odor control options and implement those that make sense for his or her operation. This regulatory approach is designed to accommodate the differences in animal types and operations.

Compliance with the odor performance standard begins Jan. 1, 2002. Class IA CAFOs have been submitting their odor control plans to the department's Air Pollution Control Program and technical reviews are under way. Approved odor control plans should be implemented in 2001.

Air Pollution Information on the Internet

There is a wealth of information about air quality issues on the Internet. You may find some of the following World Wide Web addresses helpful:

MISSOURI DEPARTMENT OF NATURAL RESOURCES

Air Pollution Control Program (www.dnr.state.mo.us/deq/apcp)

General Department Information (www.dnr.state.mo.us)

Technical Assistance Program (www.dnr.state.mo.us/deq/tap)

The complete Missouri Air Law
(www.moga.state.mo.us/statutes/c643.htm)

Department of Natural Resources - Air Quality Monitoring
(www.dnr.state.mo.us/deq/esp)

Code of State Regulations (mosl.sos.state.mo.us/csr/csr.htm)

U.S. ENVIRONMENTAL PROTECTION AGENCY

EPA Region VII (Kansas City) (www.epa.gov/region07/)

Office of Air and Radiation (www.epa.gov/oar/)

Air Links - EPA Air Quality Publications (www.epa.gov/airlinks/)

OTHER AIR QUALITY ORGANIZATIONS:

St. Louis Regional Clean Air Partnership (www.cleanair-stlouis.com/)

Heartland Sky (Kansas City)
(www.marc.org/environment/heartsky.htm)

American Lung Association (www.lungusa.org/)

Air and Waste Management Association (www.awma.org/)

Missouri Department of Health (www.health.state.mo.us/)

DAILY AIR QUALITY FORECASTS:

Kansas City (www.marc.org/airquality/airqual.htm#skycast)

St. Louis (www.cleanair-stlouis.com/4cast.htm)